



# Commercial Feasibility of Giant Clam Mariculture in American Samoa

October 1, 1994, through June 30, 1995

## Principal Accomplishments

Objective: Produce giant clam juveniles by inducing spawning of *Hippopus hippopus* and *Tridacna derasa* in the Nuuli nursery for distribution to local farmers.

Approximately 120 broodstock *H. hippopus* and *T. derasa* were induced to spawn over seven consecutive days in late October. However, significant quantities of viable eggs and sperm were not released, and the broodstock that were sacrificed for gonads had very regressed gonads. Whether this was due to seasonal factors or the broodstock being spawned too many times is unclear.

On December 12, another spawning induction according to standard procedures was attempted but no viable eggs and sperm were released. The next day, the broodstock were moved to a raceway filled with unfiltered sea water, where they spawned spontaneously.



- On the following day, approximately 3 million eggs were filtered, concentrated and moved to indoor settling tanks. These larvae were reared according to protocol described in the giant clam manual by Heslinga et al. (1990), and zooxanthelle extracts were added to all tanks.
- The clams have exhibited normal growth rates and good survival rates. In March, samples from two raceways showed the average clam had reached 3.0 mm in one raceway and 5.4 mm in another. Adult nudibranches were introduced to raceways with 100-day-old clams to control algae and appear to be working well.

*T. maxima* broodstock that were collected from the wild were induced to spawn on two occasions. The larvae from both spawnings are being grown out.



Security remains a problem for the project, with numerous clams having been stolen. The situation has improved a great deal since security gates were installed in the access road.

Objective: Establish and develop private sector participation in ocean giant clam farming.

Announcements were made on local television and in newspapers to recruit potential clam farmers. As of the end of June 1995, 14 local residents had been assisted with setting up small ocean growout nurseries. Others who responded to the announcements are being evaluated.

- Each farmer received training in how to care for the clams and 25 3.5-year-old clams. The farmers are responsible for routine care of the clams. Department personnel visit each farm monthly to collect growth and survival data.

Objective: Investigate and develop local markets for giant clams in American Samoa.

In February, *T. derasa* were taken to several fish markets and restaurants to evaluate market acceptance. Proprietors responded very favorably when asked whether they would be interested in purchasing the clams and what price they would be willing to pay (Table 1).

Table 1. Results of Preliminary Survey of Restaurant and Fish Market Owners		
Date Clams Were Spawmed	April 1991	June 1992
Age of Clams	3.8-year-old clams	2.6 year-old clams
Average Size of Clams	204 mm	133 mm
Quoted Price Range for Whole Clam	\$2 – \$4	\$1.75 – \$2.50

In May, a consultant was hired to design a market survey and a consumer taste test. Further market survey work is underway. The consumer taste test, which will compare whether local consumers prefer *H. hippopus* or *T. derasa*, will be conducted in July.

Investigators

John McConnaughey, Fa’asega Kuresa,  
 Ioelu Seve and Fa’atauva’a Lam Kitiona,  
 American Samoa Department of Marine and Wildlife Resources.